

DUCK SEASON EVALUATION
HUNTER INPUT RESULTS

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INTRODUCTION

Every five years, the U.S. Fish and Wildlife Service (USFWS) allows states the opportunity to adjust their duck season structure, including the number and location of zones and the use of split seasons. The Missouri Department of Conservation (MDC) uses this opportunity to conduct an extensive review of hunter input data, weather trends, harvest, habitat, and duck distribution to determine the best season structure for Missouri hunters. New for the 2011 review, MDC will also develop season date formulas that will be used to determine season dates in the event of 60-day, 45-day, or 30-day seasons. This report highlights the results of a 2010 statewide survey that MDC sent to a random sample of 10,000 migratory bird hunters and the findings from 16 workshops MDC conducted in March and April 2011 to engage hunters in the process of establishing Missouri duck hunting seasons.

The 2010 Migratory Bird Hunter Opinion Survey contained a series of questions designed to evaluate hunter satisfaction with the current zone boundaries and season timing and to elicit opinions about desired zone locations, season dates, and season structure (i.e., number of zones and splits). The workshops provided MDC with an opportunity to have more in-depth discussions with duck hunters about their season preferences. Each workshop participant received a [report](#) (follow link to Workshop Report by holding down Ctrl key and clicking left mouse button) that summarized hunter opinion survey results along with information about weather, habitat, harvest, and duck migrations by regions within the state. After presenting this background material, we divided workshop participants into small groups (2-12 people) based on the regions in which they hunted most. The small groups gave hunters the chance to work together to develop formulas for setting duck season dates for the next five years, to adjust zone boundaries, and to consider split season options with fewer zones. These small groups then shared their conclusions with all of the workshop participants.

The results from the statewide survey of migratory bird hunters, the survey given to individuals who attended the workshops, and the workshop small group exercise provided three sources of information to gauge hunter preferences. The statewide survey, based on scientific sampling methods, provides the most representative picture of what all duck hunters in Missouri desire. The individual survey results from workshop participants suggest what more avid hunters and those with specific concerns may desire. The results from the small groups reveal what hunters prefer after having the opportunity to work with other hunters to reach consensus on season date and season structure options. The following report compares the results from all three sources: the 2010 Migratory Bird Hunter Opinion Survey, the survey of individual workshop participants, and the workshop small group exercise. Results presented as “Statewide Survey” are from the 2010 Migratory Bird Hunter Opinion Survey. Results from the workshops are presented by workshop location (e.g. St. Charles, Jackson, Kennett, etc.) and by region most hunted (e.g. North, Southeast, Missouri River West, etc.). Regions are shown in Figure 1. Final recommendations for the 2011-2015 season structure will be based on public input and information about duck harvest, weather, and habitat conditions.



GENERAL CONSIDERATIONS

The purpose of developing a duck season date formula: Within the frameworks provided by the USFWS, MDC determines the timing of waterfowl seasons each year. The USFWS announces season length and bag limits during the last week of July. MDC staff then review biological and hunter opinion data and make season date recommendations to the Conservation Commission in mid-August. This sequence of events leaves hunters waiting until late summer or early fall before they can make plans for the upcoming duck season. Establishing duck season date formulas for the next five years for liberal (60-day), moderate (45-day), and restrictive (30-day) seasons will provide hunters earlier indications of season timing. Hunters will know what to expect for season dates when the USFWS announces the season length in late July. Maintaining a formula for a period of five years also provides a more realistic duration to evaluate changes as hunters gain experience with duck season dates during years with varying weather, habitat conditions, and migration timing.

Duck season structure options: Beginning in 1991, the USFWS offered standardized criteria for selecting zones and split seasons because of frequent requests by states for zone boundary changes. The criteria included the option to review season structure and zone boundaries every five years (e.g., season structure and zone boundaries established in 2011 must remain in place through 2015). The available choices allow for 1) a statewide season consisting of one, two, or three season segments and no zones; 2) two zones with two season segments (split season); or 3)

three zones with one season segment (continuous season). In addition, the USFWS may offer two new options; 1) four zones with one season segment (continuous season) or 2) 3 zones with two season segments (split season); however, these options are still under review and may not be available until next year, if at all. Missouri has opted for three zones and no split season since 1991, with slight modifications to zone boundaries in 2001 and 2006.

The purpose of creating duck zones: The purpose of zoning is to provide hunting opportunity across the state at times that make sense for that portion of the state depending on weather patterns, habitat, and duck migrations and distribution. To the degree possible, season dates are designed to accommodate different habitats, hunting styles, and species hunted within a given area.

Recognizing tradeoffs: Variation in weather, habitat, and hunter preferences within zones precludes the possibility of establishing season dates that will satisfy all hunters within a particular zone. Furthermore, widely separated hunting locations located within the same zone make it difficult to provide optimum dates for any particular location within that zone. The result is that season dates are rarely ideal for hunters throughout a zone, but more often represent a compromise between regions within a zone. Regardless of the final recommendation for 2011-2015, concerns about duck season dates will continue to be sources of contention among hunters because they hunt in different regions of the state, for different species, and in different habitats.

Short versus long seasons: The need to consider season structure options, including the number of zones, zone locations, and potential use of split seasons, in the context of future seasons that could range from 30 to 60 days in length was emphasized at each workshop. Additionally, season structure options selected in 2011 will apply for the next five years, regardless of season length. Therefore, under the current options, Missouri cannot alter its season structure if the USFWS would happen to call for a moderate (45-day) or restrictive (30-day) season in the next five years. Although the prospect of shortened seasons has been a distinct possibility in recent years, it is difficult for many hunters to consider 30- or 45-day seasons after 14 years of 60-day seasons.

Avid and novice duck hunters: Perspectives about preferred seasons must be considered from both avid (defined as those who hunted greater than 10 times per year) and casual (defined as those who hunted less than 10 times per year) hunters. Avid duck hunters tend to desire slightly later seasons than novice hunters. However, today's novice hunters may be an important part of future support for wetland and waterfowl conservation. Their hunting preferences will also be considered in the final recommendation.

Workshop Locations: Our goal was to hear the opinions of hunters throughout the state. We held workshops at locations near existing zone boundaries (areas where questions had arisen in recent years about zones and season dates), but also made sure to provide hunters throughout each zone the opportunity to attend meetings (Figure 2).



Figure 2. Locations of 16 Duck Season Dates and Zone Boundaries Workshops conducted in 2011.

Complex zone lines: Hunters often prefer straight boundaries on major roadways which appear to evenly partition the state for duck hunting. When possible, these simple, easily understood boundaries are most desirable. However, the diversity of habitat types, freeze-up timing, precipitation patterns, and associated hunter preferences account for the evolving complexity of duck season structure and zone boundary configurations.

Extended hunting opportunity: Hunters frequently take advantage of hunting in another zone after the season closes in their preferred zone. Although this happens to some degree by establishing different season timing through zones or split seasons, emphasis will be on establishing the best season for each region of Missouri.

Role of public and private areas: Our recommendation for zoning will be based on the best season for each habitat complex throughout a region rather than a desire to focus on public lands only in each zone. Department areas account for only about 19% of each year's hunting opportunity and harvest; thus, considering the location of zone boundaries relative to the distribution of public areas can be easily overemphasized from the standpoint of hunting opportunity.

HUNTER INPUT RESULTS

Characteristics of workshop participants and survey respondents: Missouri duck hunters have diverse hunting styles, habitat preferences, and levels of commitment to the sport. In turn, this diversity influences hunter preferences about season structure and dates. Based on the 2,417 duck hunters who responded to the 2010 Migratory Bird Hunter Opinion Survey, we learned that 59% hunt only 1-10 days each season and only 21% hunt more than 20 days (Table 1). Workshop participants tended to be much more avid duck hunters. More than twice as many of the 327 workshop participants, 45% versus 21% of survey respondents, hunted more than 20 days. Workshop participants also tended to be more experienced waterfowl hunters with 78% of

them indicating they have hunted waterfowl more than 14 years. Interestingly, 34% of waterfowl hunters in Missouri, according to the statewide survey, have experienced only 60-day seasons; lack of experience with shorter seasons likely makes it difficult for these hunters to consider season dates for 45-day or 30-day seasons. Survey respondents and workshop participants spend most of their time hunting shallow water habitat, 62% and 68% of the time, respectively. During the workshops, hunters noted the growing popularity of late-season field hunting, especially when there are opportunities to harvest both mallards and Canada geese. However, field hunting still comprises a relatively small portion of the overall duck hunting activity. Only about 8% of the days hunted by survey respondents and 6% of the days spent afield by workshop participants were in unflooded, or dry, crop fields.

Season structure preferences: During the workshops, we first had participants provide their preferred choice among the current season structure options including three zones and no splits or fewer zones with splits. Next, we asked if they would prefer this option or one of the two new options that may become available, four zones with no splits or three zones with a split. Sixty-two percent of workshop participants and 85% of the workshop small groups preferred three zones with no split (Table 2). Among survey respondents, the current three zone structure was the most preferred with 41% choosing this option compared to 13% who wanted two zones with a split. With the possibility of maintaining the same number of zones, but adding a split, the preferences are more divided. When the potential two new options are considered, 53% of workshop participants still preferred a continuous season with either three or four zones, but 48% of workshop participants indicated a preference for a split season (Table 3). Among the small groups, 61% indicated a preference for a continuous season with either four or three zones and 38% preferred a split season with either two or three zones.

Season date preferences: Although waterfowl hunters have enjoyed an unprecedented string of 14 years of 60-day duck seasons and record harvest in recent years, statewide hunter satisfaction with duck season dates remains relatively low (Table 4). Only 45% of survey respondents said they were satisfied with duck season dates and 23% indicated they were dissatisfied. Among workshop participants, 52% were satisfied and 35% dissatisfied with season dates (Table 4). Satisfaction levels with season dates were consistent across zones with 46% of survey respondents from the North Zone, 45% from the Middle Zone, and 41% from the South Zone expressing satisfaction. Workshop participants who hunted in the North and Middle zones expressed higher levels of satisfaction with season dates (51% and 61%, respectively) than participants from the South Zone (37%). This low percentage of satisfied South Zone workshop participants was the result of some hunters wanting earlier seasons and others wanting later seasons. Many participants in the western portion of the South Zone, the West Prairie Region, desired earlier seasons whereas participants in the eastern portion of the South Zone, the Bootheel Region, generally preferred later seasons. Only 26% of workshop participants and 38% of survey respondents hunting the West Prairie Region were satisfied with season dates and, similarly, 33% of workshop participants and 39% of survey respondents primarily hunting in the Bootheel were satisfied with season dates.

Season date formula options: Workshop small groups developed formulas for establishing season dates for the next five years. Before they began, we highlighted four potential formulas: 1) a specific Saturday (e.g., last Saturday of October), 2) Saturday closest to a specific date (e.g.,

Saturday closest to October 27), 3) a specific date (e.g., Thanksgiving Day), or 4) a date as late as the season structure allows. We encouraged them to record alternative formula options, if they preferred. In recent years, MDC has set season dates using informal formulas that included opening duck season on a given Saturday or Thursday of the month. These formulas included opening the North Zone on the last Saturday in October, the Middle Zone on the first Saturday in November, and the South Zone on Thanksgiving Day. A 60-day season in the North and Middle zones ends on a Tuesday. In the South Zone, opening the season on the fourth Thursday in November, i. e., Thanksgiving Day, provides hunters with two additional days of hunting over the Thanksgiving holiday weekend and results in the season closing on a Sunday rather than a Tuesday. Each formula has advantages and disadvantages as are discussed below.

- 1. Specific Saturday in a month:** Selecting a specific Saturday in a month ensures a weekend opener which provides the most people an opportunity to hunt on opening day. It also results in the greatest variation in opening days over a five-year period based on the progression of dates occurring among calendar years. For example, the last Saturday in October would result in opening days ranging from October 25 – October 31 during the next five years (Table 5). If hunters have a wide range of opinions about season timing, this formula would provide the greatest amount of compromise among hunters with early and late season preferences. In the North Zone, for example, early season hunters would benefit during years when the North Zone opened on October 25, 26, and 27 and late season hunters would benefit when it opened on October 29 and 31. If hunters are in agreement about season timing, the compromise it provides may be unnecessary. This formula is not as simple as opening the season on a specific date each year.
- 2. Saturday closest to a specific date:** The second season date formula discussed at the workshops involved selecting a Saturday closest to a specific date. Similar to choosing a specific Saturday in a month, this option ensures a weekend opener. The major difference between this formula and choosing a specific Saturday is that it slightly reduces the amount of variation that occurs among years. For example, if the North Zone season date formula was the Saturday closest to October 27, the season opening date would vary by five days over five years compared to six days using the previous formula (Table 5). Selecting a Saturday closest to a specific date also provides the opportunity to establish opening dates that may occur in two months over the course of five years. For example, the Saturday nearest November 1 would result in season opening dates ranging from October 29 to November 3. This approach would be desirable if hunters generally preferred a weekend opener, but wanted to eliminate extremely late or early opening dates during some years. It reduces the amount of compromise that can be achieved by opening on a specific Saturday of each month. It is also the most complex of all the formulas considered.
- 3. Specific date:** The third formula, opening the season on a specific date, provides the simplest approach to setting season dates. Hunters could determine the season dates without consulting a calendar and it would not vary from year to year. This formula provides essentially no compromise among hunters with early or late season date preferences and results in a weekday opener during many years (Table 5). A 30-day

season that opens on a week day would only provide 4 weekends of hunting whereas a weekend opener would result in 5 weekends of hunting. Hunters with more flexibility in their work schedules would be the least affected by a weekday opener.

- 4. As late as the framework allows:** The fourth formula, opening the season as late as the federal framework allows, is most applicable to the South Zone. It maximizes late season hunting opportunity. This formula would result in the season closing on a Sunday and opening on a Thursday, including Thanksgiving during some years (two out of the next 5 years would open on Thanksgiving Day) (Table 5). It would be most appropriate in situations where South Zone hunters desired later seasons.

Season formula preferences: Workshop small groups focused on the North and Middle zones supported the formula based on a specific Saturday of the month. For a sixty-day season, only three small groups advocated selecting a Saturday nearest a specific date and five groups suggested that the season should open on a specific day. One group chose a formula based on a specific closing date, December 24, in the North Zone. Most groups utilized the same formula for 60-, 45-, and 30-day seasons. Of the small groups developing formulas for the South Zone, five out of six offered formulas that would open a 60-day season as late as possible.

Season Date Considerations

North Zone Considerations

Survey respondents and workshop participants, on average, preferred a 60-day season to open October 29, the date the current formula (last Saturday in October) would provide in 2011 (Table 6). In the event of a 45-day season, survey respondents and workshop participants, on average, preferred the season to open a week later on November 5 (Table 7); and in the event of a 30-day season, two weeks later on November 12 (Table 8). A formula reflecting these opening day preferences could include opening a 45-day season on the first Saturday in November and a 30-day season on the second Saturday in November. This would result in a 45-day season that opens as early as November 1 and as late as November 7 in the next five years and in a 30-day season opens as early as November 8 and as late as November 14 in the next five years.

The average preferred North Zone 60-day season opening date of October 29 was based on a wide range of opinions about the timing of duck season in this zone. Only 27% of survey respondents and 29% of workshop participants selected October 29 as their preferred 60-day season opening date (Table 6). An equal percent (29%) of workshop participants preferred either an October 22 or October 29 opener. A fairly balanced proportion of North Zone hunters preferred dates either earlier or later than the last Saturday in October (Table 9). Although more survey respondents preferred later season dates (42% vs. 31% wanting an earlier season), the opposite was true among workshop participants with a higher percent (38%) desiring an earlier season than a later season (32%). Among workshop small groups with a preference for continuous seasons, 11 groups developed season date formulas that would open earlier than the current formula, 8 groups preferred the current formula, and three groups chose later seasons (Table 10).

Similar patterns occur for survey respondents and workshop participants for both 45-day and 30-day season dates. In the case of 45-day seasons, 23% of survey respondents indicated they would prefer the season to open the first Saturday in November (Table 7). Nearly an identical percent of survey respondents desired a 45-day season to open earlier than the first Saturday in November (38%) as desired it to open later than this date (39%). Workshop participants favored a slightly earlier 45-day season with 44% suggesting a date earlier than the first Saturday in November, 32% preferring the first Saturday in November, and 24% desiring something later. In the event of a 30-day season, 15% of survey respondents preferred the season to open the second Saturday in November and a similar proportion desired something earlier (40%) or later (45%). Again, workshop participants had slightly earlier season preferences with 43% wanting a 30-day season to open before the second Saturday in November, 27% to open on the second Saturday in November, and 30% to open a later.

Middle Zone Considerations

Based on the formula used in recent years, a 60-day season in the Middle Zone opens on the first Saturday in November (e.g., November 5 in 2011). On average, this was the preferred mean opening day for both survey respondents and workshop participants (Table 6). A slightly higher percent (44% of survey respondents and 45% workshop participants) preferred the season to open later than November 5 than those who prefer the season to open earlier (30% of survey respondents and 21% of workshop participants, Table 11). However, moving the 60-day season a week later does not result in a better compromise among those desiring earlier or later seasons. Instead, moving the season a week later would result in a season too late for 55% of survey respondents and workshop participants. Similarly, shifting the season a week earlier would result in the majority of survey respondents and workshop participants indicating the season was too early (69% and 79%, respectively). Workshop small groups favored the current formula with 13 groups suggesting an opening date around November 5, 3 groups preferring something earlier, and 8 preferring something later (Table 10). Of the eight groups desiring later seasons, four were focused on dates for Southeast Missouri.

Middle Zone hunters, on average, indicated they prefer a 45-day season to open a week later than a 60-day season (Table 7). This would result in a season opening around November 12. Among survey respondents, 18% preferred this opening date, 35% desired an early opener, and 46% a later opener (Table 11). Workshop participants had similar preferences with 18% suggesting an opener around November 12, 38% an earlier opener, and 44% a later opener. Nine out of 23 workshop small groups preferred a 45-day season to open around November 12 (Table 12). Only five groups indicated a later opening date.

Survey respondents and workshop participants, on average preferred a 30-day season in the Middle Zone to open on November 19 (the third Saturday in November), two weeks later than their preferred 60-day season opener (Table 8). Among survey respondents, 15% preferred this date, 36% preferred something earlier and 50% preferred something later (Table 11). Eighteen percent of workshop participants preferred a November 19 opener, 38% preferred something earlier, and 45% something later. However, the workshop small groups expressed earlier season date preferences as more than half of the small groups developed season formulas with 30-day

season opening dates earlier than November 19 (Table 13).

South Zone Considerations

Survey respondents hunting the South Zone preferred a 60-day season to open on November 24, on average, whereas workshop participants preferred November 19 (Table 6). The formula used in recent years to open the South Zone on Thanksgiving Day would result in a November 24 opening date in 2011. The earlier season date preference among workshop participants was the product of earlier season preferences among South Zone hunters in the West Prairie Region (Barton and Jasper counties). Workshop participants in this region preferred a November 12 opener, on average, compared to a November 26 opener among workshop participants from the Bootheel and the remainder of the South Zone. Based on survey results, hunters from the West Prairie Region preferred a November 12 opener, those from the Bootheel a November 24 opener, and those from the remainder of the South Zone a November 19 opener.

Although the average season date preference was in November for survey respondents and workshop participants, a significant contingent preferred season dates as late as possible. In fact, December 1, the latest opening date the federal framework allows, was the most popular choice for a 60-day season opener among South Zone survey respondents with 37% of them selecting this option (Table 6). Among survey respondents from the three regions within the South Zone, 43% of the Bootheel survey respondents, 22% of West Prairie survey respondents, and 30% of survey respondents from the remainder of the South Zone selected this option. While this was the most popular option among survey respondents, it would result in a season that would be deemed too late by 61% of South Zone survey respondents (Table 14). Maintaining the current season date formula of opening the South Zone on Thanksgiving Day would result in a season that would be preferred by 14%, too late for 32%, and too early for 54% of South Zone survey respondents. However, among workshop participants who hunted mainly in the South Zone, 26% indicated they preferred the same season dates as the current formula (Thanksgiving Day opener) and the same number (37%) preferred either earlier or later season dates. When deciding season dates in small groups, workshop participants gravitated towards later season dates with five out of ten groups suggesting to open the season as late as the framework would allow (Table 10). Three of the four groups that preferred an earlier opener hunted in the West Prairie Region and desired Middle Zone season dates.

In the event of a 45-day season, South Zone survey respondents, on average, preferred the season to open on December 3 whereas workshop participants preferred a mean opener of November 26 (Table 7). Similar to a 60-day season, survey respondents and workshop participants from the Bootheel desired the latest season dates and those from the West Prairie Region the earliest. Among all South Zone survey respondents, a December 3 season opener (first Saturday in December) would be too late for 47%, about right for 11%, and too early for 42% (Table 14). In the event of a 30-day season, survey respondents, on average, preferred an opening date of December 10 and workshop participants a December 3 opener (Table 8). However, the most popular choice was to open the season as late as the federal framework would allow (December 24 in 2011). This option was chosen by 36% of South Zone hunters. It was the preferred choice of 36% of survey respondents and 43% of workshop participants who hunt primarily in the Bootheel.

Zone Boundary Considerations

Generally, hunters tend to be more satisfied with zone boundaries than with season dates. Among all survey respondents, 46% expressed satisfaction with current zone lines, 42% were neutral and only 12% were dissatisfied (Table 4). A higher percent of all workshop participants (65%) compared to survey respondents (45%) expressed satisfaction with zone borders and a similar percent (19%) were dissatisfied or indicated they were neutral (17%) about zone locations. A similar percent of survey respondents were satisfied with zone lines in the North, Middle and South Zones (50%, 44%, and 45%, respectively) whereas a higher percent of workshop participants expressed satisfaction with zone lines in the North and Middle Zones (72% and 64%, respectively) than in the South Zone (49%).

North Zone Considerations in Missouri River West Region

Background: North Zone hunters in the region we have labeled Missouri River West expressed similar levels of satisfaction with season dates as hunters in the entire North Zone with 46% of both groups expressing satisfaction with season dates according to data supplied by 242 survey respondents. Similarly, of the 41 workshop participants that primarily hunted in this region, 45% expressed satisfaction with season dates. However, 45% of workshop participants expressed dissatisfaction with season dates compared to 27% of respondents to the statewide survey (Table 4).

Hunters in the Missouri River West Region have season date preferences that are better matched with the Middle Zone than with the North Zone. On average, hunters in this region prefer a 60-day season to open on November 5, the same date the Middle Zone currently opens (Table 6). They prefer a 45-day season to open on November 12 and a 30-day season to open on November 19, similar to the timing preferred by Middle Zone hunters (Tables 7 and 8). Of hunters who hunt primarily in this region, nearly 60% of survey respondents and 50% of workshop participants preferred a 60-day season to open later than it has in recent years. Survey respondents who hunt primarily in this region reported that they spent 49% of their days hunting in shallow water habitat, 36% in deep water habitat, and 15% in dry crop fields. Shallow water hunting accounts for a higher proportion of hunting effort in the remaining regions of Missouri. If the recent increase in popularity of field hunting continues, we expect an increasing demand for later seasons in this region.

Options and Potential Trade-Offs:

Although hunters in this region expressed a desire for later season dates, it did not translate into a desire for zone boundary adjustments. Sixty-seven percent of survey respondents suggested keeping the zone line at its present location, 16% desired the zone line to be moved north to the Missouri River and 16% preferred it be changed back to Highway 50, the zone boundary in place before 2006 (Table 15). The workshop small groups comprised of hunters in this region suggested either maintaining the current zone boundary (3 groups), changing the zone boundary north to Highway 24 in western Missouri (1 group), or implementing a duck season with 2 zones and a split (2 groups). Two small groups of North Zone hunters advocated moving the line to Highway 24 and 1 group suggested the north bank of the Missouri River.

Move North/Middle Zone boundary north to include the Missouri River (Kansas City to Mid-Missouri) in the Middle Zone: Only 16% of the survey respondents and one workshop small group recommended moving the zone boundary to the Missouri River (Figure 3). During initial workshops, participants expressed uncertainty about how to interpret a Missouri River zone boundary as they were unclear as to which zone would include the river. In subsequent workshops, we then clarified that the zone boundary would be the high bank on the north side of the river, so the entire river would be included in the Middle Zone. This option would only provide later hunting opportunity on the Missouri River and the crop fields south of the river. It could potentially reduce shallow water hunting opportunity at Grand Pass CA and surrounding wetlands south of the River due to freeze-up. It would also result in an opening date after the peak migration of early migrant species.

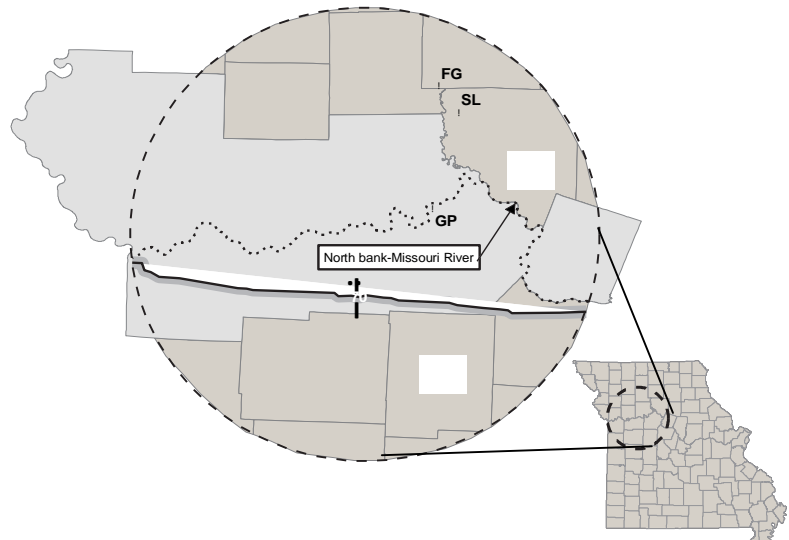


Figure 3. Option that moves the North/Middle Zone boundary from Interstate 70 to the north bank of the Missouri River in western Missouri. Missouri River West Region is shaded, FG= Fountain Grove CA, SL= Swan Lake NWR, and GP=Grand Pass CA.

Move North/Middle Zone Boundary north to Highway 24 in western Missouri:

Although this option received little attention during the 2006 review and therefore was not included as an option in the statewide survey, three small groups (1 group that primarily hunted in the Missouri West Region and 2 groups that hunted primarily in the North Region) offered this as an alternative zone line. They advocated moving the North Zone boundary north to Highway 24/Highway 10 from Highway 63 in central Missouri to Kansas City (Figure 4). An additional amendment to this proposed zone line could include Smithville

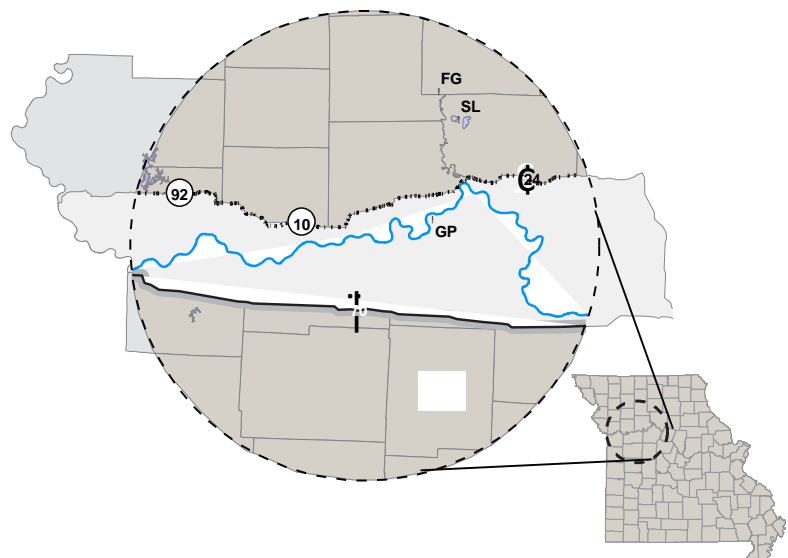


Figure 4. Option that moves the North/Middle Zone boundary from Interstate 70 north to Highway 24/Highway 10 in western Missouri and continuing west on Highway 92 to the Missouri-Kansas border. Missouri River West Region is shaded, FG= Fountain Grove CA, SL= Swan Lake NWR, and GP=Grand Pass CA. Smithville Reservoir is shown north of Highway 92.

Reservoir in the Middle Zone. We did not have any workshop attendees that primarily hunted at Smithville Reservoir, so we do not know what their preferences may be.

Moving the zone line to Highway 24 would include the Missouri River, surrounding crop fields, Dalton Cutoff, Jackass Bend, Sunshine Lake, and potentially Smithville Reservoir in the Middle Zone. It would provide hunters in these locations with more late season hunting opportunity and more concurrent mallard and Canada goose hunting opportunity. However, this change likely would reduce hunting opportunity for shallow water hunters who hunt at Grand Pass CA and wetlands along the Missouri River most notably in the Dalton and Wakenda bottoms. This proposed change could move approximately 14,000 acres of Wetland Reserve Program (WRP) wetlands into the Middle Zone.

North Zone Considerations in Eagle Bluffs CA Region

Background: MDC moved the North Zone Boundary to I-70 in 2006 to accommodate hunter desires for later seasons and a straighter, less complex zone boundary. At the time, 51% of survey respondents and 75% of workshop participants desired later seasons. Opinions about zone boundaries were more varied, with 44% of survey respondents and 68% of workshop participants desiring a zone line change. This change benefited river hunters along the stretch of the Missouri River between Jefferson City and Columbia and resulted in reduced hunting opportunity due to ice at Eagle Bluffs CA, Perry CA, and a small number of private and public shallow water wetlands along the Blackwater and Lamine rivers. It reduced opportunity for early season migrants such as green-winged teal, wood ducks, gadwalls and pintail in the affected region.

During the past five years, hunters in this region experienced season dates as late as possible using the current formula of opening the Middle Zone season on the first Saturday in November. It opened on November 7 in 2009 and November 6 in 2010. During this time period, they also experienced 3 out of 5 falls that were colder than normal. At Eagle Bluffs, for example, over the past four years, an average of nearly 20 days of shallow water hunting were lost due to ice that was at least 2 inches thick over most of the area.

Move the North/Middle Zone Boundary Back to Highway 50: Given the combination of below average temperatures during recent falls and later than average seasons, we expected that hunter satisfaction with season dates in this region would have declined. We also expected that hunters would desire earlier seasons than they did in 2006 and that they would want the zone line changed back to Highway 50. This was not the case. Only 13% were dissatisfied with season dates and zone boundaries (Table 4) compared to 15% who were dissatisfied with zone boundaries and 54% who were dissatisfied with season dates in 2006. Among 2011 workshop participants who hunted primarily in the Eagle Bluffs Region, 92% were satisfied with zone boundaries and 77% were satisfied with season dates (Table 4). According to the statewide survey, 67% prefer to maintain the current zone line and only 19% would like to see it moved back to Highway 50 (Table 15). Results about season dates from the statewide survey and workshops were less conclusive. An equal percentage of survey respondents (22%) and workshop participants (42%) preferred either an October 29 or November 5 opener in the event

of a 60-day season (Table 6). On average, survey respondents actually desired season dates as late as or even slightly later than currently offered in the Middle Zone. In contrast, the 12 workshop participants who hunted in this region preferred the season to open around November 5.

North Zone Considerations in eastern Missouri (St. Charles County)

Background: The North Zone was modified in 2001 to include St. Charles County in the Middle Zone. Preferences for somewhat later season dates were the basis for this recommendation. Workshop and survey results indicate that St. Charles County hunters are currently satisfied with season dates and zone boundaries. Only 6% of survey respondents and workshop participants who hunted most in this county indicated they were dissatisfied with zone boundaries (Table 4). A higher proportion, 20%, of both survey respondents and workshop participants, expressed dissatisfaction with season dates.

Move the Zone boundary back to Interstate 70: Of the 173 survey respondents that hunted most in St. Charles County, 73% preferred the existing zone line and 23% indicated they would prefer it moved back to Interstate 70 (Table 15). At the workshops, none of the six small groups focused on St. Charles County indicated a desire to move the line back to Interstate 70. One group proposed that the Department shift the line further north to include B.K. Leach CA in the Middle Zone. Some groups comprised of members who did not hunt St. Charles County asked that the line be shifted back to Interstate 70 to provide a straighter, simpler North Zone boundary.

South Zone Considerations in the West Prairie Region (Barton County and Jasper County)

Background: Season dates in Barton County and northern Jasper County have been a source of contention for 20 years. Some hunters and landowners in this region prefer season dates that more closely align with the Middle Zone in order to have more opportunity to hunt shallow prairie lakes that can potentially freeze-up by early to mid-January. Other hunters who hunt larger water bodies and surrounding crop fields prefer later season dates. They note that hunting improves for them when ducks depart shallow water habitat in the Middle Zone such as Four Rivers CA and Schell-Osage CA after freeze-up.

In 1991, MDC moved the South Zone boundary south in western Missouri to provide earlier hunting opportunity in Barton and Jasper counties while retaining late season hunting opportunity on Stockton and Pomme De Terre Reservoirs and Spring River (remained in the South Zone). In 2001, the boundary was moved back to highway 54 in response to hunter input at workshops in Carthage and Lamar, thus, returning these counties to the South Zone. It provided more late season hunting opportunity in Barton and Jasper counties and created a straighter, simpler zone boundary. However, this change did not alleviate concerns about the zone location or timing of duck season. At the conclusion of the 2006 Duck Zone Review, we noted the continued lack of consensus about zone boundaries and season dates in this part of the state. At the time, 50 and 57 percent of Springfield and Lamar workshop participants, respectively, were satisfied with zone boundaries whereas only 30 and 41 percent were satisfied with season dates. Workshop participants expressed desires for season dates a week earlier than

South Zone dates but two weeks later than Middle Zone dates. We did not modify the zone boundary because only 2 out of 8 small groups at the two workshops in this region suggested changing the zone boundary. Moreover, the average season date preferences, although earlier than what was offered in the South Zone, remained closer to the South Zone than the Middle Zone.

In recent years, colder falls/winters and late harvests have combined to create optimal field hunting conditions in this region. The growing popularity of field hunting has exacerbated the divide between those with early and late season hunting preferences. Of the 25 survey respondents who indicated they hunted primarily in the West Prairie Region, 48% were satisfied with zone boundaries, but only 38% were satisfied with season dates (Table 4). Among the 23 workshop participants who hunted primarily in the West Prairie Region, 48% expressed dissatisfaction with zone boundaries and 52% were dissatisfied with season dates. The level of dissatisfaction with season dates among workshop participants who hunt primarily in this region was the highest in the state.

Developing zone line recommendations for this region is challenging due to the lack of information we have about hunter preferences or duck use from this region. Because relatively few hunters primarily hunt in this region, statewide surveys represent only a small number of respondents. Attempts to oversample in this region did not result in substantial increases in sample size. Information on duck use in this region is also scant. No major refuges exist in this region and duck use can vary dramatically depending on weather conditions and crop harvest patterns.

Options and Potential Trade-Offs:

Move the South Zone Boundary Back to the 1991-2000 Location: Survey respondents and workshop participants were asked if they preferred the current zone boundary or the line that was in place 10 years ago (Figure 5). Of the 20 individuals responding in the statewide survey, 80% preferred no change (Table 15). In contrast, 56% of workshop participants preferred the old zone line and another 19% preferred other alternatives. Three of five workshop small groups focused on the West Prairie Region preferred changing the zone line back to the 1991-2000 location. One group preferred two zones with a split in an effort to get additional early season hunting opportunity and one group preferred the zone to remain in its current location. Season date preferences were divided. Of 18 survey respondents, 35% would like a 60-day season to open on or before November 5 and 61% desire season dates as late as or later than the current South Zone opener on Thanksgiving Day (November 24 in 2011) (Table 6). Among

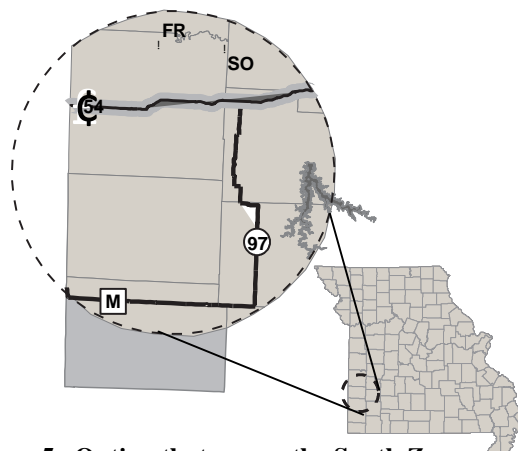


Figure 5. Option that moves the South Zone boundary south on Highway 97, then west on Routes N, NN, and M to the Kansas border. West Prairie Region is shaded, FR= Four Rivers CA, SO=Schell-Osage CA, and Stockton Reservoir is shown east of Highway 97.

the 28 workshop participants, the proportion of hunters wanting earlier or later seasons was nearly the reverse of those responding to the statewide survey. Fifty-seven percent preferred a November 5 opener and 32% a November 24 or later opener. These differences are even more pronounced in a 30-day season (Table 8). Among workshop participants, 58% desired a 30-day season that would start on November 5 and end on December 4. In contrast, 24% of workshop participants and 47% of survey respondents would not even want a 30-day season to begin until several days after the closing date preferred by this group.

These differences in date preferences reflect the opinions of 2 distinct groups of hunters. Landowners and hunters who have access to shallow prairie lakes prefer earlier season dates. Hunters who are hunting fields or deeper water bodies prefer much later season dates. Field hunters noted that a return to the old zone boundary would drastically reduce field hunting opportunity for mallards coming from Stockton Reservoir. The old zone boundary line of Highway 97 parallels fairly close to Stockton Reservoir. These hunters noted that if the intent of the old zone line was to provide opportunity to hunt Stockton Reservoir birds, it should include the fields where ducks from the reservoir are feeding in the South Zone.

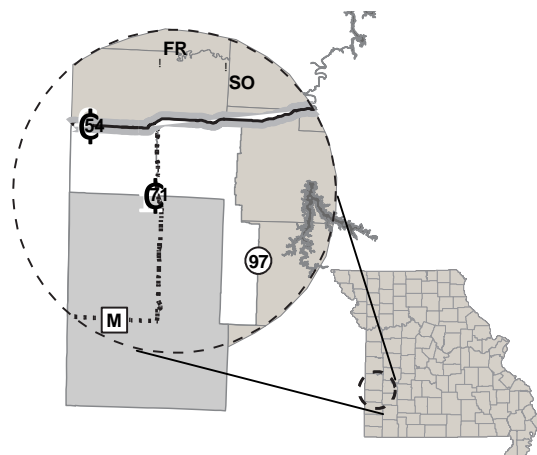


Figure 6. Option that moves the South Zone boundary south on Highway 71, then west on Jasper County Highway M to the Kansas border. West Prairie Region is shaded, FR= Four Rivers CA, SO=Schell-Osage CA, and Stockton Reservoir is shown east of Highway 97.

Move South Zone Boundary from Highway 54 to Highway 71 to Jasper County Highway M: Workshop participants proposed a compromise zone boundary after the small groups presented their results. The compromise would return a portion of this region into the Middle Zone. Rather than going from Highway 54 to Highway 97, it would go south from Highway 54 on Highway 71 and then run west on Highway M (Figure 6). This boundary would be over 20 miles west of Stockton Lake and, as a result, provide field hunters the opportunity to pursue ducks field feeding from Stockton Lake. Figure 7 shows the distribution of habitat in the region that would be affected by a zone line change back to either Highway 97 or to Highway 71. The line separating Zone 1 and Zone 2 in Figure 7 is Highway 71. The region west of

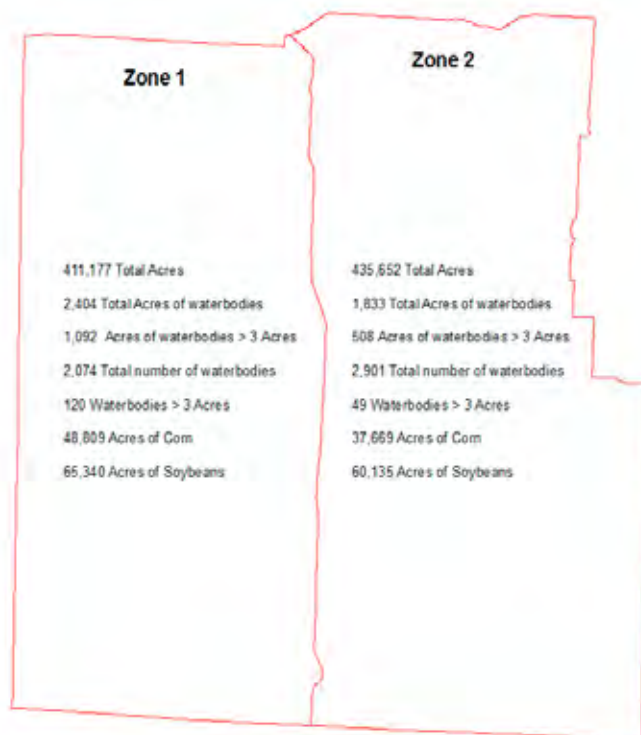


Figure 7. Habitat west of Highway 71 (Zone 1) and east of Highway 71 (Zone 2).

Highway 71 has more water than the region east of Highway 71 (2,404 acres vs. 1,833 acres). Both regions have similar numbers of corn and soybean fields (114,149 acres west of Highway 71 and 97,804 acres east of Highway 71).

South Zone Considerations in Southeast Missouri

Background: MDC established the current South Zone boundary in Southeast Missouri in 1986. The original intent of this boundary location was to provide shallow water hunters in Southeast Missouri with season dates that would minimize the risk of freeze-up during the season, while providing Bootheel hunters the opportunity to hunt late when habitat conditions usually were better along the Mississippi River and St. Francis River. With the growing popularity of rice production, available habitat for ducks has changed dramatically since 1986. In Butler and Stoddard counties, the two largest rice producing counties in Missouri, total rice acreage has nearly doubled from just over 59,000 acres in 1987 to nearly 101,000 acres in 2007, according to the Census of Agriculture. More recently, based on the USDA, National Agricultural Statistics Service Cropland Data Layer, the amount of rice in the South Zone has more than doubled from approximately 62,000 acres in 2001 to almost 138,000 acres in 2010. Furthermore, beginning in 2006, farmers were eligible to enroll their rice acres in a 10-year contract that provided an incentive to flood rice fields after harvest for a period of three to four months. Approximately 40,000 acres are now enrolled in this program. Driven by the growth in rice production, the South Zone now has much more shallow water available for hunting than it did in 1986 when this zone line was established. Analysis of water coverage suggests nearly equal amounts of shallow and deep water habitat in the Middle and South Zones in Southeast Missouri when including the Mississippi River, Clearwater Lake and Wappapello Lake.

Differences in factors influencing waterfowl hunting still remain in Southeast Missouri. Data from weather stations located in Southeast Missouri suggest pronounced temperature differences as you travel from north to south in this region. Figure 8 shows that in the northern portion of Southeast Missouri, there is a 90% probability that temperatures will fall below 16 degrees by early to mid-January. In contrast, in the extreme southern portion of this region, similar conditions do not occur until late January.

Peak duck numbers also generally occur earlier at Duck Creek CA, Mingo NWR, and Otter Slough CA in the Middle Zone than they do at Ten Mile Pond CA in the South Zone. It is uncertain if differences in timing are due to differences in management of these areas, delayed arrival and departure of ducks in habitat further south, or different cohorts of ducks using habitat more proximate to the Mississippi River than more interior habitats. For example, Ten Mile Pond CA usually holds a greater number of black ducks than the other state and federal areas in Southeast Missouri.

Hunter opinions about the best timing of the duck season are mixed as a result of the long



Figure 8. Dates associated with a 90% probability of temperatures at or below 16°F in Southeast Missouri.

duration ducks are present during the fall and winter. Early season migrants arrive in Southeast Missouri about the same time they arrive in the remainder of the state; however, they stay much longer in this region compared to locations further north in Missouri. While the portion of the Southeast region in the Middle Zone is more at risk of freeze-up, ducks rarely leave this region for an extended period of time. Some hunters prefer earlier seasons when more early season migrants are present and when they have the best opportunity to hunt during migration events. These hunters argue that after ducks have been hunted in the same region for an extended period of time and when ducks begin forming pair-bonds, they become more difficult to decoy and hunt. Other hunters prefer to hunt when temperatures are colder and ducks are more actively feeding and moving as habitat conditions change due to rain or temporary freezes.

During past reviews of zone boundaries, Middle Zone hunters in Southeast Missouri have expressed interest, on average, for a season that would be about a week later than recent Middle Zone seasons, but two and half weeks earlier than the South Zone season. According to the 2005 statewide survey, 37% of Middle Zone hunters in Southeast Missouri preferred the zone line to remain unchanged, 43% preferred including all of Southeast Missouri in the South Zone, 18% preferred Highway 60, and 1% offered a different alternative. Of the 23 small groups at Dexter and Jackson during the 2006 workshops, 11 preferred the zone to remain unchanged, 6 groups preferred moving the entire Southeast Missouri into the South Zone, 3 groups preferred moving a portion of it into the South Zone, and 3 groups could not reach consensus. At the time, local MDC Wildlife and Protection staff noted that hunters appeared to have less of a desire for a zone change than five years earlier.

During the 2011 review, duck hunters in the Southeast region continued to express some of the lowest levels of satisfaction with zone boundaries in the state. Only 39% of survey respondents who primarily hunted the Southeast region indicated they were satisfied with zone boundaries and this percentage was even lower among workshop participants at 31% (Table 4). Nearly 60% of the 36 workshop participants who hunted in this region were dissatisfied with zone boundaries. Although dissatisfied with zone boundaries, survey respondents who hunted in Southeast Missouri expressed similar levels of satisfaction with season dates compared to all hunters statewide (42% satisfied in Southeast Missouri compared to 45% statewide). While a similar percentage of workshop participants expressed satisfaction with season dates (44% compared to 45% all hunters statewide survey), a much higher percentage of workshop participants (47%) expressed dissatisfaction with season dates compared to all hunters responding to the statewide survey (23%). Similar to five years ago, respondents to the statewide survey who primarily hunted in the Southeast region, on average, preferred a 60-day season to open on November 12, two and half weeks earlier than the South Zone, but workshop participants, on average, preferred a November 19 opener (Table 6).

Options and Potential Trade-Offs:

Maintain the Current South Zone Boundary: Maintaining the current zone line (Figure 9) had only marginal support among survey respondents and even less support among workshop participants. Only 32% of survey respondents with a zone boundary preference and 30% of workshop participants indicated they prefer maintaining the current zone line in Southeast Missouri. Four of nine workshop small groups preferred maintaining the current zone boundary. Retaining the current zone boundary in Southeast Missouri would benefit the 44% of survey respondents who prefer a 60-day season to open on November 5 or earlier, but it would be too early for the 56% of survey respondents who desire later seasons. This pattern held true for 45-day and 30-day seasons as well.

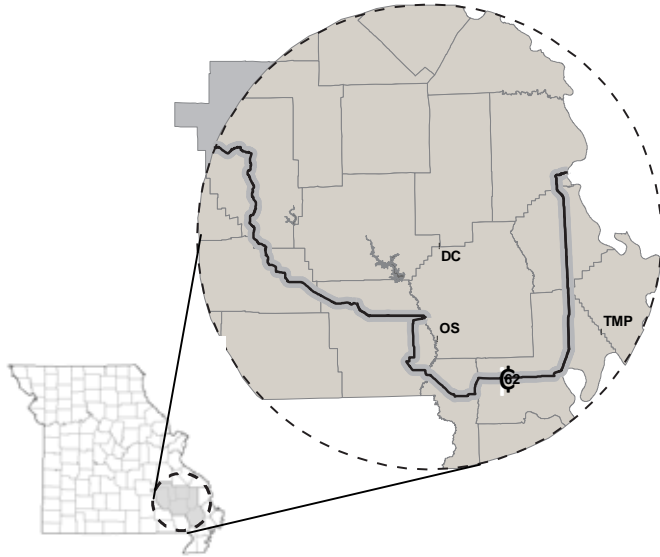


Figure 9. Current South Zone boundary in Southeast Missouri. Southeast Region is shaded, DC=Duck Creek CA, OS=Otter Slough CA and TMP=Ten Mile Pond.

Shift the Zone Boundary to Highway 60: Adjusting the South Zone Boundary to Highway 60 would result in a slight addition of Southeast Missouri into the South Zone, including Otter Slough Conservation Area (CA) (Figure 10). Of those with a zone preference, 19% of survey respondents, 14% of workshop participants, and no small groups selected this option. Some workshop participants who primarily hunted other regions in the state mentioned they were in favor of this zone boundary change to provide an additional public area, Otter Slough CA, in the South Zone.

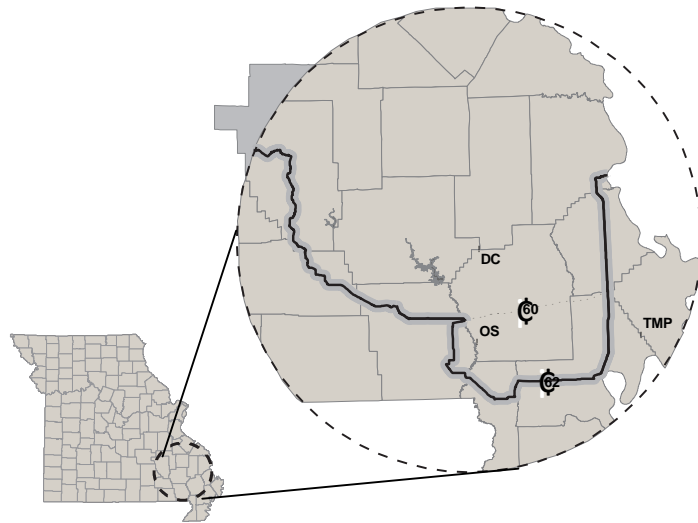


Figure 10. Option that moves the South Zone boundary north from Highway 62 to Highway 60 in Southeast Missouri. Southeast Region is shaded, DC= Duck Creek CA, OS=Otter Slough CA and TMP= Ten Mile Pond .

Shift the South Zone Boundary to Highway 25:

One small group suggested moving the zone boundary from Interstate 55 to Highway 25 if the zone boundary could not be moved to include all of Southeast Missouri in the South Zone (Figure 11). It was noted that rice field and shallow water habitats in Southeast Missouri are divided into two regions by a slight rise in elevation that extends from north to south. Highway 25 follows this slight ridge and could make an easily distinguished border between the Middle and South zones. This zone change would place a more extensive portion of Southeast Missouri into the South Zone, while keeping Otter Slough CA, Duck Creek CA, and Mingo NWR in the Middle Zone. Hunters in the Charter Oak vicinity noted that duck use and harvest is generally later in the area east of Highway 25 compared to the west around Otter Slough CA. Local MDC staff generally agreed with this assessment. While this change would likely accommodate the relatively small number of hunters who hunt in the area that would be placed in the South Zone, for many other hunters it would likely raise questions of why this region was singled out.

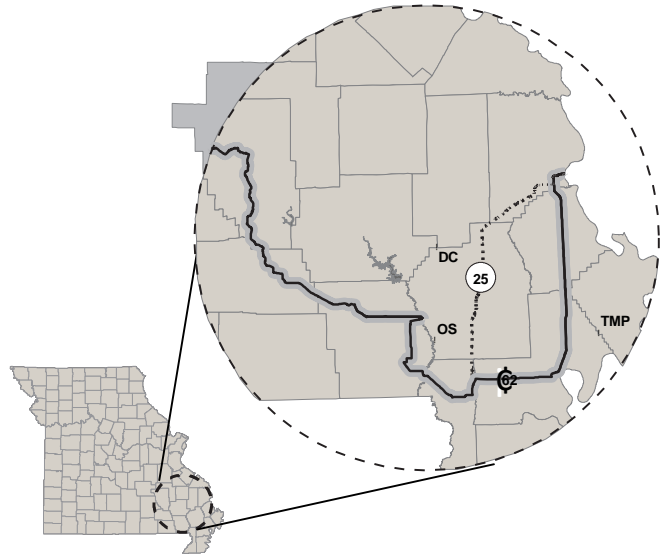


Figure 11. Option that moves the South Zone boundary west from Interstate 55 to Highway 25 in Southeast Missouri. Southeast Region is shaded, DC= Duck Creek CA, OS=Otter Slough CA and TMP=Ten Mile Pond.

Shift the South Zone boundary to include all of Southeast Missouri in South Zone (Highway 72 or 34):

Shifting the South Zone boundary to either Highway 72 or Highway 34 had the strongest support among survey respondents and workshop participants (Figure 12). Of the survey respondents with a zone boundary preference, 47% desired this change. Of those who wanted a boundary change of some kind, 66% preferred this option. Based on individual surveys from workshop participants, 52% preferred this option compared to 28% who desired no change. Only two out of the nine small groups focused on this region preferred this option. However, three additional

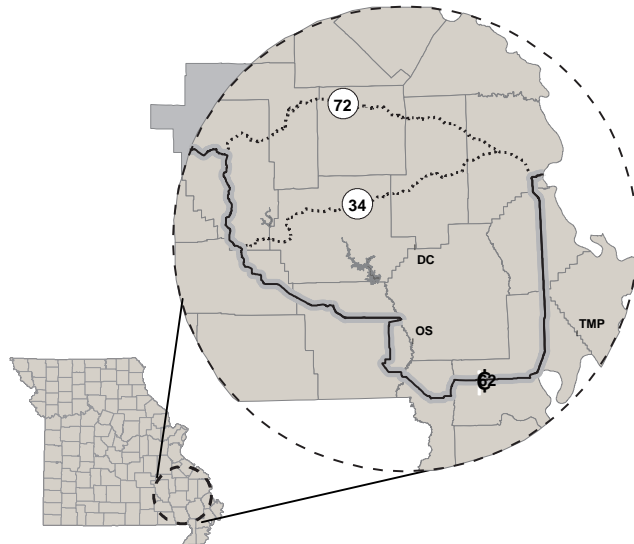


Figure 12. Option that moves the South Zone boundary north from Highway 62 to either Highway 72 or Highway 34 in Southeast Missouri. Southeast Region is shaded, DC= Duck Creek CA, OS=Otter Slough CA and TMP=Ten Mile Pond CA.

groups desired later seasons and recommended a season structure that included two zones and a split to provide additional late season hunting opportunity. Three out of four groups of Bootheel hunters preferred this change. Some participants were concerned that when the Middle Zone closes it acts as a refuge and ducks leave the areas they hunt in the South Zone.

Although this change was the most preferred, it would result in the greatest mismatch between zone boundary locations and season date preferences. In a 60-day season, this zone change would result in a season that was later than desired by 69% of the hunters in that region. In a thirty-day season, it would result in a season later than desired by 78% of the hunters in this region. More importantly, this season structure would miss the week most preferred to hunt by 67% of hunters during a 30-day season.

At one workshop, participants indicated if given a choice between a season that opened on November 5, one week earlier than their preferred option, or on November 24, two weeks later than their preferred option, they would prefer November 24. It is uncertain if other hunters in this region would share this perspective if the season could not open on November 12.

CONCLUSIONS

Given the variety of zone boundary and season date recommendations, it soon becomes apparent that there is not an ideal suite of zoning or season date recommendations that will accommodate all Missouri hunters. Rather, compromises within zones and between regions are required to accommodate the greatest number of hunter preferences. Before gathering public input, we expected that North Zone hunters would prefer earlier season dates after experiencing the combination of late seasons with below normal temperatures. Instead, we found that hunters in the North Zone generally favored the season dates they have had in recent years. In the Missouri River West Region, hunters desire dates that more closely match the Middle Zone season dates, yet very few advocated a zone boundary modification to put this region in the Middle Zone.

In the Middle Zone, hunters also generally favored the current season dates. We learned that hunters from the Eagle Bluffs Region and St. Charles County are generally satisfied with the changes MDC made in 2006 and 2001 to put these regions in the Middle Zone. In contrast to Missouri River West hunters who desire later season dates, but no zone boundary modifications, Southeast Missouri hunters voiced a fairly strong desire to change the zone boundary even though their season date preferences better match the zone in which they are currently located. Each potential zone option in this region has tradeoffs. Adjusting the zone boundary west to Highway 25 shifts a portion of the Southeast Region into the South Zone, thus, accommodating later season date preferences for hunters in the Charter Oak vicinity. However, it does not address the desire for later season dates among other Southeast Missouri hunters. Shifting the zone boundary to either Highway 72 or Highway 34 would address this desire; however, it would be at the expense of other Southeast hunters with earlier season preferences and would result in the greatest mismatch between zone boundaries and season date preferences in the state. If the optimal season opener of November 12 is not possible, it is uncertain if hunters in this region would prefer staying in the Middle Zone with a November 5 opener or moving into the South Zone with much later season dates.

Hunters in South Missouri have differing opinions about season dates that generally can be divided among regions. Bootheel hunters desire later South Zone season dates than currently offered. Hunters through much of the remainder of the South Zone desire slightly earlier seasons and many hunters in the West Prairie Region desire Middle Zone dates. A shift to later season dates may result in greater satisfaction with season dates among some hunters, especially in the Bootheel,. It would result in a season later than desired by hunters in other regions and it would cost hunting opportunity over the Thanksgiving Holidays during some years. Based on hunter participation patterns on MDC managed wetlands, losing days over the Thanksgiving Holiday would be the equivalent of losing a popular weekend for hunting. In the West Prairie Region, season dates and the zone boundary location clearly pit two distinct groups of hunters against one another. Hunters who hunt shallow prairie lakes desire a season that opens at the same time as the Middle Zone. Those hunters hunting fields and some of the larger lakes prefer the season to be open as late as possible. These distinct preferences offer little room for compromise.

We will base a final proposal for 2011-2015 on results from the workshops, statewide surveys and other sources of information about hunter attitudes, duck harvest, weather, and habitat conditions.